

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously Presented) A method of providing location services (LCS), comprising:

- receiving a request for location information for a mobile station from a location client;
- determining whether suitable location information is available from a cache;
- performing authorization for location distribution based on a first security procedure to determine whether the location client is authorized to receive the location information for the mobile station via a first network entity;
- performing authentication for the location distribution based on the first security procedure to authenticate the location client;
- performing authorization for location determination based on a second security procedure, independent of the first security procedure, to determine whether a second network entity is authorized for the location information for the mobile station;
- performing authentication for the location determination based on the second security procedure to authenticate the second network entity;
- performing location determination to obtain location information for the mobile station responsive to the request for the location information when the suitable location information for the mobile station is unavailable; and
- performing location distribution via the first and second network entities to provide the location information for the mobile station responsive to the request for the location information, and skipping the location determination when the present location information for the mobile station is available from the cache.

2. (Canceled)

3. (Previously Presented) The method of claim 1, wherein the second security procedure is based on an MD-5 algorithm and the first security procedure is based on an Authentication and Key Agreement (AKA) procedure.

4. (Previously Presented) The method of claim 1, further comprising:
performing a first session key setup to obtain a first session key, wherein the first session key is used for authentication and encryption of messages exchanged with the first network entity; and
performing a second session key setup to obtain a second session key, wherein the second session key is used for authentication and encryption of messages exchanged with the second network entity.

5. (Previously Presented) The method of claim 1, wherein the location determination and the location distribution are performed in two separate LCS sessions.

6. (Canceled)

7. (Previously Presented) The method of claim 1, wherein the second network entity is located in a serving network for the mobile station and the first network entity is located in a home network for the mobile station.

8. (Previously Presented) The method of claim 1, wherein the location distribution is performed by a location client and a location server.

9. (Previously Presented) The method of claim 8, wherein the first network entity includes an LCS provider, and wherein the location client is located in the mobile station or the LCS provider.

10. (Previously Presented) The method of claim 8, wherein the first network entity includes an LCS server, and wherein the location server is located in the mobile station or the LCS server.

11. (Previously Presented) The method of claim 1, wherein the second network entity includes a position determining entity (PDE).

12. (Previously Presented) The method of claim 11, wherein the second network entity further includes a serving mobile positioning center (SMPC).

13. (Previously Presented) The method of claim 11, wherein the second network entity further includes a home authentication, authorization, and accounting entity (H-AAA).

14. (Previously Presented) The method of claim 1, wherein the first network entity includes an LCS server.

15. (Previously Presented) The method of claim 14, wherein the first network entity further includes a home authentication, authorization, and accounting (H-AAA) entity.

16. (Original) The method of claim 1, wherein the location information for the mobile station comprises a location estimate for the mobile station.

17. (Previously Presented) The method of claim 16, wherein the location information for the mobile station further comprises an uncertainty for the location estimate for the mobile station.

18. – 28. (Canceled)

29. (Previously Presented) An apparatus comprising:
means for receiving a request for location information for a mobile station from a location client;

means for performing a first session key setup to obtain a first session key,
wherein the first session key is used for authentication and encryption of messages exchanged between a first network entity and the mobile station;

means for performing location determination via a first secure LCS session using the first session key to obtain location information for the mobile station responsive to the request for the location information when present location information for the mobile station is unavailable from a cache;

means for performing a second session key setup to obtain a second session key, wherein the second session key is used for authentication and encryption of messages exchanged between a second network entity and the location client; and

means for performing location distribution via a second secure LCS session using the second session key, independent of the first secure LCS session, to provide the location information for the mobile station to the location client responsive to the request for the location information, and skipping the location determination when the present location information for the mobile station is available from the cache.

30. (Previously Presented) A computer program product residing on a non-transitory processor-readable medium and comprising processor-readable instructions configured to cause the processor to:

authenticate, based on a first session obtained using a first security procedure, a location client requesting location information of a mobile station via a home network;

obtain location information for the mobile station responsive to the authenticated request for location information for the mobile station when present location information for the mobile station is unavailable from a cache;

authenticate the mobile station for location determination responsive to the request for location information based on a second security procedure, independent of the first security procedure; and

provide, from a serving network, the location information to the location client responsive to the request for the location information for the mobile station, and skip obtaining the location information when the present location information for the mobile station is available from the cache.

31 - 43. (Canceled)

44. (Previously Presented) A method of providing location services (LCS), comprising:
- receiving a request, from a location client, for location disclosure of a mobile station;
 - authenticating the request using a secure disclosure session key and a secure disclosure session between a network and the location client;
 - determining whether cached location information is available;
 - if the cached location information is available, responding to the request for location disclosure with the location information in the secure disclosure session;
 - if the cached location information is not available, initiating a request for location determination;
 - establishing a secure determination session, between the network and the mobile station, independent of the secure disclosure session, to authenticate the request for location determination; and
 - communicating location information within the secure determination session.
45. (Previously Presented) The method of claim 44, wherein authenticating the request comprises:
- receiving a request for the secure disclosure session key; and
 - providing the secure disclosure session key in response to successful authentication and validation of the request for the secure session key.
46. (Previously Presented) The method of claim 44 wherein authenticating the request comprises mutually authenticating the location client and a first network entity of the network, and wherein establishing the secure determination session comprises mutually authenticating the mobile station and a second network entity of the network.
47. (Previously Presented) The method of claim 46 wherein the first and second network entities are a single network entity.

48. (Previously Presented) A system in a wireless communication network, the system comprising:

a home network server configured to:

receive a request from a location client for location disclosure of a mobile station;

authenticate the request using a secure disclosure session key and a secure disclosure session with the location client;

determine whether cached location information is available;

respond to the request for location disclosure with the location information in the secure disclosure session if the cached location information is available; and

initiate a request for location determination if the cached location information is not available; and

a serving network server communicatively coupled to the home network server and configured to:

establish a secure determination session, independent of the secure disclosure session, to authenticate the mobile station;

determine the location information of the mobile station; and

communicate the location information to the home network server.

49. (Previously Presented) The system of claim 48, wherein the home network server is configured to perform mutual authentication with the location client and to provide the location information to the location client, and wherein the serving network server is configured to perform mutual authentication with the mobile station.

50. (Previously Presented) The system of claim 48 wherein the home and serving network servers are a single server.

51. (New) An apparatus comprising:

means for receiving a request for location information for a mobile station from a location client;

means for obtaining a first session key for authentication and encryption of messages exchanged between a first network entity and the mobile station;

means for exchanging information via a first secure LCS session using the first session key to determine location information for the mobile station responsive to the request for the location information only when present location information for the mobile station being unavailable from a cache;

means for obtaining a second session key for authentication and encryption of messages exchanged between a second network entity and the location client; and

means for distributing the determined location information via a second secure LCS session using the second session key, independent of the first secure LCS session, to provide the determined location information for the mobile station to the location client responsive to the request for the location information.